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Docket No. 8733.453.00
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Soon-Sung YOO et al.

Customer No. 30827

Application No. 09/893,970

Confirmation No. 6132

Filed: June 29, 2001

Art Unit: 2813

For: LIQUID CRYSTAL DISPLAY DEVICE AND
ITS FABRICATING METHOD

Examiner: Schillinger, Laura M.

MS Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Sir:

In response to a Final Rejection of all pending claims that was mailed on July 21, 2005 and an Advisory Action that was mailed on November 10, 2005, and in support of a "Notice of Appeal" filed November 21, 2005, Appellants hereby submit this Appeal Brief.

The fees required under § 1.17(f) and any required petition for extension of time for filing this brief and fees therefore are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37(c):

- I. Real Party In Interest
- II. Related Appeals and Interferences
- III. Status of Claims
- IV. Status of Amendments
- V. Summary of Claimed Subject Matter

VI. Grounds of Rejection to be Reviewed on Appeal

VII. Argument

Appendix A Claims

Appendix B Evidence

Appendix C Related Proceedings

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is: LG.PHILIPS LCD CO., LTD.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences that will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Total Number of Claims in the Application

There are 16 claims pending in the application.

Current Status of Claims

Claims canceled: 9-20.

Claims withdrawn from consideration but not canceled: None.

Claims pending: 1-8 and 21-28.

Claims allowed: None.

Claims rejected: 1-8 and 21-28.

Claims On Appeal: The claims on appeal are claims 1-8 and 21-28.

IV. STATUS OF AMENDMENTS

The Examiner issued a Final Rejection on July 21, 2005 and an Advisory Action on November 10, 2005. No amendment has been filed in response to this Final Rejection or Advisory action. Accordingly, the claims enclosed herein as Appendix A reflect the current status of claims 1-28.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The present invention is directed to a liquid crystal display device having a uniform cell gap. The liquid crystal display (LCD) device includes a first substrate 31. (See Figs. 3 and 4, page 6, lines 25-26.) A main seal 33 is on the first substrate 31 and defines a liquid crystal injection area. (See Figs. 3 and 4, page 6, lines 25-29.) A first compensating layer (or stacked-layer patterns) is under the main seal 33, the first compensating layer providing a step upon which the main seal is raised. (See Figs. 3 and 4, page 7, lines 17-21.) Also, a plurality of dummy seals 38A to 38D are formed on the first substrate and external to the liquid crystal injection area. (See Figs. 3 and 4, page 6, lines 31-33.) A second compensating layer under the plurality of dummy seals 38A to 38D, the second compensating layer providing a step upon which the dummy seals are raised and having substantially a same structure as the first compensating layer. (See Figs. 3 and 4, page 7, line 24 to page 8, line 6.) Also, the second compensating layer may have a width substantially the same as a width of the dummy seals disposed between the first substrate and the plurality of dummy seals, the second compensating layer having substantially a same structure as the first compensating layer. (See Figs. 3 and 4, page 7, line 24 to page 8, line 6.)

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The Examiner rejected claims 21-28 under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the written description requirement. The Examiner rejected claims 1-3, 5, 21-23 and 25 under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent No. 6,239,855 to Nakahara et al. ("Nakahara"). The Examiner rejected claims 6 and 26 under 35 U.S.C. §102(e) as allegedly being anticipated by Nakahara considered with Applicant's admissions of record. The Examiner rejected claims 4, 7, 8, 24, 27, and 28 under 35 U.S.C. §103(a) as allegedly being unpatentable over Nakahara. The Examiner rejects claims 7, 8, 27, and 28 under 35 U.S.C. §103(a) as allegedly being unpatentable over Nakahara in view of Japanese Patent No. JP 08-278510 A to Hiraki et al. ("Hiraki").

VII. ARGUMENT

- A. The Examiner improperly rejected claims 21-28 under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the written description requirement.

With regard to claim 21, the Examiner asserts that specification makes no mention of the width of the first and second compensating layers and the drawings show the widths of the compensating layers to be wider than that of the seals. Therefore, the Examiner asserts that claim 21 constitutes new matter. Further, the Examiner states with regard to the Applicant's assertion that this is supported at page 9, lines 1-3: "The specification at this location makes no mention, explicitly or implicitly, of the width of the compensating layer relative to that of the dummy seal." Further the Examiner states:

Examiner respectfully submits that -- based upon Applicant's own analysis then -- the terminology "substantially the same width" would also include that the compensating layers could be slightly narrower than that seals. But the range "slight narrower" falls outside the metes and bounds of the original disclosure while falling under "substantially the same width." Nowhere in the four corners of the disclosure is there support for the compensating

layers being slightly narrower than the seals. Ergo, “substantially the same width” extends beyond the scope of the original claims.

The portion of the specification cited by the Applicant discusses the etching of the various layers associated with the seals shown in Figures 4 and 5. Because the compensating layer under the dummy seal is formed by etching, it is well understood by those in the art that the result of the etching process can result in an etched layer being slightly wider or narrower than the mask used to etch, because of over or under etching that might occur. Therefore, because an etching process is used to form the compensation layer, it is well understood to one of skill in the art that such a compensating layer may have some variation in its width and thus the use of the language, “substantially the same width” would be well understood from the specification. Therefore, Applicant requests the withdrawal of the rejection of claims 21-28 under 35 U.S.C. § 112, second paragraph.

- B. The Examiner improperly rejected claims 1-3, 5, 21-23 and 25 under 35 U.S.C. §102(e) as allegedly being anticipated by U.S. Patent No. 6,239,855 to Nakahara et al. (“Nakahara”).

In order to support a rejection under 35 U.S.C. §102, the cited reference must teach each and every claimed element. In the present case, claims 1-3, 5, 21-23 and 25 are not anticipated by Nakahara because Nakahara fails to disclose each and every claimed element as discussed below.

Independent claim 1 defines a liquid crystal display device that includes, *inter alia*, a first substrate; a main seal on the first substrate defining a liquid crystal injection area; a first compensating layer under the main seal, said first compensating layer providing a step upon which the main seal is raised; a plurality of dummy seals on the first substrate and external to the liquid crystal injection area; and a second compensating layer under the plurality of dummy

seals, the second compensating layer providing a step upon which the dummy seals are raised and having substantially the same structure as the first compensating layer.

In rejecting claim 1, the Examiner points to column 4, line 57-62 as disclosing the claimed first and second compensating layers. More specifically, the Examiner asserts that the functional film of Nakahara is equivalent to the claimed compensating layers because it is deposited under the main and dummy seals. In addition, the Examiner asserts that Nakahara expressly teaches (1) the step coverage compensating layer, and (2) the step coverage compensating layer is substantially the same width as the dummy seal because the step-shaped coverage compensating layer is only that portion of the "functional film" on which the seal is formed. These assertions are unfounded for the following reasons.

First, Applicants note that it is unclear where the Examiner has interpreted Nakahara as disclosing that (1) the functional film is only disposed under the dummy seals, or that (2) the functional film of Nakahara is equivalent to the claimed compensating layers simply because it is under the dummy seals. Either interpretation is incorrect.

Although, Nakahara discloses in column 4, lines 58-59 that the dummy seal is formed only on a portion of the functional film outside the liquid crystal injection area, Nakahara clearly discloses that the functional film is a continuous layer formed inside and outside the injection area. The present invention clearly calls for a first compensating layer and a second compensating layer. There is no way that the single functional film of Nakahara can be two separate compensating layers.

Furthermore, the functional film of Nakahara is not equivalent to the claimed compensating layer merely because it is under the dummy seals. Using this logic, the glass substrate of Nakahara would be equivalent to the claimed compensating layer because it is under the dummy seal. Clearly, the functional film of Nakahara, which extends inside and out of the liquid

crystal injection area is not equivalent to the claims first and second compensating layers. Accordingly, Nakahara fails to anticipate independent claim 1.

Independent claim 21 defines a liquid crystal display device that includes, *inter alia*, a first compensating layer with a width substantially the same as the width of a main seal and disposed between a first substrate and the main seal, and a second compensating layer with a width substantially the same width as the width of the dummy seals and disposed between the first substrate and the plurality of dummy seals. Accordingly, claim 21 is not anticipated by Nakahara for at least the reason that Nakahara fails to disclose each and every claimed element. (See discussion above with respect to claim 1). Further, the functional film of Nakahara does not have substantially the same width as the width of the dummy seal. In Nakahara the functional film has a width extending across the whole display, which be many times wider than the width of a dummy seal. The Examiner's assertion "that the compensating layers are substantially the same widths as the main seal and dummy seal because the step-shaped coverage compensating layer is only that portion of the 'functional film' on which the seal if formed" is a fanciful and incorrect interpretation of what Nakahara teaches. The Examiner is simply twisting the reference in an attempt to anticipate the present invention. Such fanciful interpretations of Nakahara are not consistent with one of skill in the art would understand.

Claims 2, 3, 5, 22, 23 and 25 variously depend from independent claims 1 and 21. Therefore, claims 2, 3, 5, 22, 23 and 25 are patentably distinguishable over Nakahara for at least those reasons presented above with respect to claims 1 and 21. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1-3, 3, 21-23 and 25 under 35 U.S.C. §102(e).

- C. The Examiner improperly rejected claims 6 and 26 under 35 U.S.C. §102(e) as allegedly being anticipated by Nakahara considered with Applicant's admissions of record.

Claims 6 and 26 depend independent claims 1 and 21, respectively. Therefore, claims 6 and 26 are patentably distinguishable over Nakahara for at least those reasons presented above with respect to claims 1 and 21. Accordingly, Applicants respectfully reconsideration and withdrawal of the rejection of claims 6 and 26 under 35 U.S.C. §102(e).

- D. The Examiner improperly rejected 4, 7, 8, 24, 27, and 28 under 35 U.S.C. §103(a) as allegedly being unpatentable over Nakahara.

Claims 4, 7, 8, 24, 27 and 28 variously depend from independent claims 1 and 21. Therefore, claims 4, 7, 8, 24, 27 and 28 are patentably distinguishable over Nakahara for at least those reasons presented above with respect to claims 1 and 21. More specifically, Nakahara fails to disclose or suggest first and second compensating layers that provide a step upon which the main seal and dummy seals, respectively, are raised and have substantially the same structure (Claim 1) or that have substantially the same width as the main and dummy seals (Claim 21). Therefore, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 4, 7, 8, 24, 27 and 28 under 35 U.S.C. §103(a).

- E. The Examiner improperly rejected claims 7, 8, 27, and 28 under 35 U.S.C. §103(a) as allegedly being unpatentable over Nakahara in view of Japanese Patent No. JP 08-278510 A to Hiraki et al. ("Hiraki").

Claims 7, 8, 27, and 28 under 35 variously depend from independent claims 1 and 21. Therefore, claims 7, 8, 27, and 28 under 35 are patentably distinguishable over Nakahara for at least those reasons presented above with respect to claims 1 and 21. Furthermore, Hiraki fails to overcome the deficiencies of Nakahara.

Since Nakahara and Hiraki both fail to disclose or suggest a liquid crystal display device that includes first and second compensating layers that provide a step upon which the main seal

and dummy seals, respectively, are raised as claimed, the combination of these two patents cannot possibly disclose or suggest said feature. Therefore, even if one skilled in the art were motivated to combine Nakahara and Hiraki, the combination would still fail to render claims 7, 8, 27, and 28 under 35 unpatentable for at least the reason that the combination fails to disclose each and every claimed element. Accordingly, Applicants respectfully reconsideration and withdrawal of the rejection of claims 7, 8, 27, and 28 under 35 under 35 U.S.C. §103(a).


A copy of the claims involved in the present appeal is attached hereto as Appendix A.

If these papers are not considered timely filed by the Patent and Trademark Office, then a petition is hereby made under 37 C.F.R. § 1.136, and any additional fees required under 37 C.F.R. § 1.136 for any necessary extension of time, or any other fees required to complete the filing of this response, may be charged to Deposit Account No. 50-0911. Please credit any overpayment to deposit Account No. 50-0911. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

Dated: April 20, 2006

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APPENDIX A

Claims Involved In The Appeal Of Application Serial No. 10/326,402:

1. (Previously Presented) A liquid crystal display device, comprising:
a first substrate;
a main seal on the first substrate and defining a liquid crystal injection area;
a first compensating layer under the main seal, said first compensating layer providing a step upon which the main seal is raised;
a plurality of dummy seals on the first substrate and external to the liquid crystal injection area; and
a second compensating layer under the plurality of dummy seals, the second compensating layer providing a step upon which the dummy seals are raised and having substantially a same structure as the first compensating layer.
2. (Original) The liquid crystal display device according to claim 1, wherein the main seal is provided with a liquid crystal injection hole through which a liquid crystal can be injected.
3. (Original) The liquid crystal display device according to claim 1, wherein the main seal and the dummy seals have a same thickness.
4. (Previously Presented) The liquid crystal display device according to claim 1, wherein the first compensating layer has a thickness of about 6500Å.

5. (Original) The liquid crystal display device according to claim 1, wherein a top of the main seal and tops of the dummy seals are a same distance from the first substrate.

6. (Original) The liquid crystal display device according to claim 1, further comprising:

a gate metal pattern on the substrate forming a gate line and a gate electrode; and
a gate-insulating layer covering the gate metal pattern.

7. (Previously Presented) The liquid crystal display device according to claim 6, wherein the first and second compensating layers include the gate metal pattern and the gate-insulating layer.

8. (Original) The liquid crystal display device according to claim 6, wherein the main seal and the dummy seals are formed on the gate-insulating layer.

Claims 9-20 (Canceled).

21. (Previously Presented) A liquid crystal display device, comprising:
a first substrate;
a main seal on the first substrate and defining a liquid crystal injection area;
a first compensating layer with a width substantially the same as a width of the main seal disposed between the first substrate and the main seal;

a plurality of dummy seals on the first substrate and external to the liquid crystal injection area; and

a second compensating layer with a width substantially the same as a width of the dummy seals disposed between the first substrate and the plurality of dummy seals, the second compensating layer having substantially a same structure as the first compensating layer.

22. (Previously Presented) The liquid crystal display device according to claim 21, wherein the main seal is provided with a liquid crystal injection hole through which a liquid crystal can be injected.

23. (Previously Presented) The liquid crystal display device according to claim 21, wherein the main seal and the dummy seals have a same thickness.

24. (Previously Presented) The liquid crystal display device according to claim 21, wherein the first compensating layer has a thickness of about 6500Å.

25. (Previously Presented) The liquid crystal display device according to claim 21, wherein a top of the main seal and tops of the dummy seals are a same distance from the first substrate.

26. (Previously Presented) The liquid crystal display device according to claim 21, further comprising:

a gate metal pattern on the substrate forming a gate line and an gate electrode; and
a gate-insulating layer covering the gate metal pattern.

27. (Previously Presented) The liquid crystal display device according to claim 26, wherein the first and second compensating layers include the gate metal pattern and the gate-insulating layer.

28. (Previously Presented) The liquid crystal display device according to claim 26, wherein the main seal and the dummy seals are formed on the gate-insulating layer.

APPENDIX B

Evidence:

None.

APPENDIX C

Related Proceedings:

None.